WHAT IS CLAIMED IS:

1. A process for producing a silicon carbide single crystal comprising steps of:

placing a silicon carbide single crystal substrate as a seed crystal in a vessel; and

supplying, on the silicon carbide single crystal substrate, a silicon carbide raw material gas including at least one of arsenic and arsenic compound therein.

2. A process for producing a silicon carbide single crystal as in claim 1, wherein:

silicon carbide raw material powder as a supply source of the silicon carbide raw material gas is arranged in the vessel; and

the at least one of arsenic and arsenic compound is added to the silicon carbide raw material powder.

3. A process for producing a silicon carbide single crystal as in claim 1, wherein:

the at least one of arsenic and arsenic compound is provided in the vessel.

4. A process for producing a silicon carbide single crystal as in claim 1, wherein:

a gas containing the at least one of arsenic and arsenic compound is introduced into an interior of the vessel.

5. A process for producing a silicon carbide single crystal comprising:

placing a silicon carbide single crystal substrate as a seed crystal in a vessel; and

supplying, on the silicon carbide single crystal substrate, a silicon carbide raw material gas including at least one of an n-type dopant atom having a smaller atomic radius than silicon and a compound thereof, and at least one of a metallic atom other than light metals having a larger atomic radius than silicon and a compound thereof.

6. A process for producing a silicon carbide single crystal as in claim 5, wherein:

an addition amount of the metallic atom is such an amount that is smaller than an addition amount of the n-type dopant atom but is larger than an amount required for relaxing crystalline distortion caused by the n-type dopant atom.

7. A process for producing a silicon carbide single crystal as in claim 5, wherein:

the n-type dopant atom is at least one selected from nitrogen and phosphorus.

8. A process for producing a silicon carbide single crystal as in claim 5, wherein:

the metallic atom is an atom having an atomic radius of from 1.17 to 1.60 Å.

9. A process for producing a silicon carbide single crystal as in claim 8, wherein:

the metallic atom is at least one selected from titanium, vanadium and tantalum.

10. A process for producing a silicon carbide single crystal as in claim 5, wherein:

the at least one of n-type dopant atom and compound thereof is added to the silicon carbide raw material gas by supplying a gas containing the at least one of n-type dopant atom and compound thereof to an interior of the vessel.

11. A process for producing a silicon carbide single crystal as claimed in claim 5, wherein:

the silicon carbide raw material powder as a supply source of the silicon carbide raw material gas are arranged in the vessel; and

the at least one of metallic atom and compound thereof is added to the silicon carbide raw material gas by adding the metallic atom and compound thereof to the silicon carbide raw material powder.

12. A process for producing a silicon carbide single crystal as in claim 5, wherein:

the at least one of the metallic atom and compound thereof is provided in the vessel.

13. A process for producing a silicon carbide single crystal as in claim 5, wherein:

a gas containing at least one of the metallic atom and compound thereof is supplied into an interior of the vessel.

~~14.~~ A silicon carbide single crystal comprising:

a crystalline structure containing arsenic therein.

15. A silicon carbide single crystal as in claim 14, wherein:

concentration of the arsenic is from 1×10^{16} to 1×10^{20} cm^{-3}.

~~16.~~ A silicon carbide single crystal comprising:

a crystalline structure containing an n-type dopant atom having a smaller atomic radius than silicon and a metallic atom other than light metals having a larger atomic radius than silicon in a crystalline structure thereof.

17. A silicon carbide single crystal as in claim 16, wherein:

concentration of the n-type dopant atom is from 1×10^{16} to 1×10^{20} cm^{-3}.

18. A silicon carbide single crystal as in claim 16, wherein:

concentration of the metallic atom is from 1×10^{14} to 1×10^{18} cm^{-3}.

19. A process for producing a silicon carbide single crystal comprising steps of:

placing a silicon carbide single crystal substrate as a seed crystal in a vessel; and

supplying, on the silicon carbide single crystal substrate, a silicon carbide raw material gas including at least one of a p-type dopant atom having a larger atomic radius than carbon and compound thereof, and at least one of an atom having a smaller atomic radius than silicon and compound thereof.

20. A process for producing a silicon carbide single crystal as in claim 19, wherein:

an addition amount of the atom having a smaller atomic radius than silicon is such an amount that is smaller than an addition amount of the p-type dopant atom but is larger than an amount required for relaxing crystalline distortion caused by the p-type dopant atom.

21. A process for producing a silicon carbide single crystal as in claim 19, wherein:

the p-type dopant atom is at least one selected from boron, aluminum and gallium.

22. A process for producing a silicon carbide single crystal as in claim 19, wherein:

the atom having a smaller atomic radius than silicon is an atom having an atomic radius of from 0.64 to 1.17 Å.

23. A process for producing a silicon carbide single crystal as in claim 22, wherein:

the atom having a smaller atomic radius than silicon is a carbon fluoride gas.

24. A process for producing a silicon carbide single crystal as in claim 19, wherein:

a gas containing at least one of the p-type dopant atom and compound thereof is supplied to an interior of the vessel.

25. A process for producing a silicon carbide single crystal as in claim 19, wherein:

silicon carbide raw material powder as a supply source of the silicon carbide raw material gas is arranged in the vessel; and

the at least one of the atom having a smaller atomic radius than silicon and compound thereof is added to the silicon carbide raw material gas.

26. A process for producing a silicon carbide single crystal as in claim 19, wherein:

the at least one of the atom having a smaller atomic radius than silicon and compound thereof is provided in at least an inner surface of the vessel.

27. A process for producing a silicon carbide single crystal as in claim 19, wherein:

the at least one of the atom having a smaller atomic radius than silicon and compound thereof is supplied as a gas into the vessel.

28. A silicon carbide single crystal comprising:

a crystalline structure including a p-type dopant atom having a larger atomic radius than carbon and an atom having a smaller atomic radius than silicon.

29. A silicon carbide single crystal as in claim 28, wherein:

concentration of the p-type dopant atom is from 1×10^{16} to 1×10^{20} cm^{-3}.

30. A silicon carbide single crystal as in claim 28, wherein:

concentration of the atom having a smaller atomic radius than silicon of from 1×10^{14} to 1×10^{18} cm^{-3}.